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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/696,683

Filing Date: October 29, 2003

Appellant(s): HEIMAN, GARY L.

Randall S. Jackson, Jr.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed February 22, 2008 appealing from the Office action mailed June 15, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 2004/0229538 A1	LOVE, III et al.	11-2004
US 5,487,936	COLLIER	01-1996
US 2003/0190853 A1	LOVINGOOD	10-2003

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US 5,495,874

HEIMAN

03-1996

Tortora, Phyllis. Fairchild's Dictionary of Textiles: 7th edition. Fairchild Publications, New York. 2003. p 596

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

Claims 1, 3, 14, 16, 33, 35, and 38 – 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Love, III et al. (2004/0229538 A1).

Love, III et al. discloses a woven fabric made from at least 50% of synthetic fiber components (abstract). The woven fabric can include synthetic fibers, blends of two or more synthetic fibers, and blends of synthetic and natural fibers (paragraph 14). The yarns can be made from spun or filament yarns, or combinations thereof (paragraph 14). Further, the fabric can have a weave construction including plain weave, satin weave, or twill weave fabrics (paragraph 15). The examples teach combining polyester spun yarns in the warp direction with polyester filament yarns in the filling direction (paragraph 58). Also, the spun yarns can include a blend of natural staple fibers with synthetic staple fibers (paragraph 165). Thus, the spun yarns are made of natural fibers. Further, the examples include fabrics made with a 2 x 1 twill weave construction (paragraph 165). Thus, claims 1, 3, 14, 16, 33, 35 and 38 – 40 are anticipated.

Claim Rejections - 35 USC § 103

Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Love, III et al.

The features of Love, III et al. have been set forth above. While Love, III et al. has disclosed that twill weaves can be used to produce the woven fabric, including an example with a 2 x 1 twill structure, Love, III et al. fails to teach using a 3 x 1 or 4 x 1 twill weave structure. However, it would have been obvious to one having ordinary skill in the art to choose a 3 x 1 or 4 x 1, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416. Further, one of ordinary skill in the art would be motivated to increase the float length to a 3 x 1 or 4 x 1 float structure to have longer floats on the surface of the fabric and produce a smoother surface structure in the finished product. Thus, claims 36 and 37 are rejected.

Claims 1, 3, 14, 16, 33, and 35 – 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Collier in view of Lovingood (2003/0190853).

The features of Collier and Lovingood have been set forth in the previous Office Action. While Collier discloses a multicolor woven 2 x 2 twill fabric comprising spun warp yarns and synthetic multifilament filling yarns, Collier fails to teach using a 2 x 1, 3 x 1, or 4 x 1 twill structure.

Lovingood is drawn to woven fabrics made from warp and weft yarns of different composition which dye to produce a desired visual pattern (abstract). Lovingood discloses that the woven fabric can be produced with various weave patterns including

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2 x 1 twill and 3 x 1 twill fabrics (paragraph 29). Therefore, it would have been obvious to one having ordinary skill in the art to use a 2 x 1 or 3 x 1 twill structure as disclosed by Lovingood, to produce a different visual effect in the fabric of Collier since Collier discloses that different weave patterns can be used to create different designs in the fabric. Therefore, claims 1, 3, 9, 10, 12, 14, 16, 33, 35 and 38 – 40 are rejected.

Further, it would have been obvious to one having ordinary skill in the art to choose a 2 x 1, 3 x 1, or 4 x 1 twill weave pattern instead of a 2 x 2 twill pattern to modify the appearance and texture of the fabric. Further, one of ordinary skill in the art would be motivated to increase the float length to a 3 x 1 or 4 x 1 float structure to have longer floats on the surface of the fabric and produce a smoother surface structure in the finished product. Thus, claims 36 and 37 are rejected.

Claims 1, 3, 14, 16, 33, and 35 – 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heiman in view of Fairchild's Dictionary of Textiles (Tortora, Phyllis. 7th edition. Fairchild Publications, New York. 2003. p 596).

Heiman discloses a woven fabric having warp and weft yarns wherein the warp yarn comprise spun cotton yarns and the filling yarns comprise continuous filament polyester yarns (column 3, lines 43 – 55). However, Heiman fails to teach using a twill pattern with warp floats in the woven fabric. Fairchild's discloses that twill weaves are a basic twill characterized by yarns that float over or under at least two consecutive picks (definition). The smallest repeat for a twill weave is a 2/1 twill structure (definition). Further, the twill weave is used to produce a strong, durable, firm fabric (definition).

Thus, it would have been obvious to one having ordinary skill in the art to substitute a 2/1 twill weave for the plain weave structure disclosed by Heiman since twill weaves are a commonly known weave structure which is known to produce a strong, durable fabric. It would be within the level of ordinary skill in the art to choose the fabric design, i.e., 2 x 1, 3 x 1, or 4 x 1 twill pattern based on the desired appearance and end use of the fabric. Thus, claims 1, 3, 14, 16, 33, and 35 – 40 are rejected.

Double Patenting

Claims 1, 3, 14, 16, 33, and 35 – 37 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 – 21 of U.S. Patent No. 5,495,874 in view of Fairchild's Dictionary of Textiles for the reasons of record.

US 5,495,874 claims a woven fabric having continuous polyester filament filling yarns and cotton spun warp yarns. However, US 5,495,874 fails to claim a 2/1 twill weave structure. Fairchild's discloses that twill weaves are a basic twill characterized by yarns that float over or under at least two consecutive picks (definition). The smallest repeat for a twill weave is a 2/1 twill structure (definition). Further, the twill weave is used to produce a strong, durable, firm fabric (definition). Thus, it would have been obvious to one having ordinary skill in the art to substitute a 2/1 twill weave for the plain weave structure disclosed by Heiman since twill weaves are a commonly known weave structure which is known to produce a strong, durable fabric.

(10) Response to Argument

Appellant argues that Love, III et al. fails to teach spun yarns made of natural fibers (response, pages 8 – 9). However, as acknowledged by the Appellant, Love, III et al. discloses spun yarns made of blends of natural and synthetic fibers. Thus, Love, III et al. discloses spun yarns made of natural fibers. Appellant argues that Love, III does not teach a woven fabric having a spun yarn made **solely** of natural fibers. As mentioned above, Appellant acknowledges that Love, III teaches a spun yarn blend of natural and synthetic fibers. It should be noted that Appellant's arguments are not commensurate in scope with the claimed invention as the claims do not exclude the presence of synthetic fibers, in particular, Appellant's claims do not use the term **solely**. It should be noted that the claim reads "and at least one of the warp yarns being spun yarn of natural fibers".

Appellant argues that claims 36 and 37 call for woven fabrics with 3X1 and 4X1 float patterns and indicates that the Examiner acknowledges that Love, III does not teach the float patterns. Appellant submits that such modifications are non-obvious and would destroy the intended purpose and/or change the principle of operation of the invention. Appellant argues that the intended purpose of Love, III is to create a woven stretchable using non-stretch yarns. Appellant argues that the stretchable nature of the fabric is imparted by the synthetic fibers which are excluded by Appellant's claims.. As discussed above, Appellant's arguments are not commensurate in scope with the claimed invention as the claims do not exclude the presence of synthetic fibers, in particular, Appellant's claims do not use the term **solely**. It should be noted that the

claim reads "and at least one of the warp yarns being spun yarn of natural fibers". In addition, Appellant argues that without the aid of hindsight reconstruction, there is simply nothing in Love that lead one to increase the float pattern of the warp yarns to 3X1 and 4X1. The Examiner has specifically noted in the rejection of claims 36 and 37 that Love, III teaches that twill weaves can be used to produce the fabric and that increasing the float length to a 3X1 and 4X1, which are both types of twill weaves, would produce a smoother product. The Examiner submits that sufficient motivation has been set forth to modify the float pattern of Love, III.

Appellant argues that one would have not been motivated to combine Collier and Lovingood to produce a woven fabric with 2 x 1, 3 x 1, or 4 x 1 twill patterns. Appellant argues that Collier is drawn to weave patterns with a balanced number of warp yarns and weft yarns on the fabrics surface (response, pages 10 – 13). First, it is noted that Collier states that the invention described in the patent can include a wide variety of changes and modifications to the preferred embodiments (column 10, lines 24 – 30). Thus, the invention is not limited to the specific embodiments, but can be modified. Further, Collier teaches that the method of using different types of fibers woven together, wherein the different yarns dye differently is a low cost method of producing a multi-colored fabric, that can be used to provide a wide variety of fabrics and visual effects for bed linens and table linens (column 10, lines 8 – 25). Thus, the preferred embodiment of Collier, i.e., a woven fabric with a balanced number of warp and weft yarns on the fabric surface, is not taught to the complete exclusion of other woven fabric patterns. In fact, Collier has provided sufficient suggestion that the purpose of the

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invention is to produce various multi-colored patterns with various designs. Further, Lovingood is drawn to multi-colored fabrics similar to Collier, with a different type of yarn in the warp direction than the weft direction. Lovingood discloses that various weave patterns, without limitations, such as 2 x 1 and 3 x 1 twill fabrics, can be used to produce multi-colored woven fabrics. Therefore, Lovingood teaches that a twill pattern produces a desired multi-colored fabric pattern that can be used to make multi-colored woven fabrics. Thus, the references provide sufficient teaching and suggestion that using different weave pattern in multi-colored fabrics is desired and obvious to one with ordinary skill in the art.

Appellant argues that Heiman fails to suggest using float patterns in the woven fabric and provides no motivation to use weave structures with float patterns (response, pages 11 – 12). The Examiner submits that Heiman does teach that 1 x 1 plain weave fabrics are preferred. However, Heiman provides very little discussion with regard to the weave structure of the fabric. And while the 1 x 1 plain weave structure is preferred, Heiman does not teach or suggest other weave structures *can't* be used as the weave structure of the fabric. Further, as set forth by Fairchild's, twill weaves are commonly known and provide improved properties with regard to strength and durability. Thus, Fairchild's provides the suggestion and motivation to use a twill weave structure to improve the durability and strength of the woven fabric taught by Heiman.

In response to Appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon

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hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the Appellant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Thus, the rejection is maintained.

The Appellant argues that the double patenting rejection should be withdrawn because there is not sufficient evidence to choose the twill weave structure (response, pages 12 – 13). However, as set forth above, there is sufficient motivation in the prior art to use a twill weave structure in the woven fabric claimed by Heiman. Further, with regards to the double patenting rejection itself, it is noted that the claims of Heiman do not recite any limitations specific to the pattern used to make the woven fabric, but instead recite a general woven fabric. And for the reasons set forth above, it would have been obvious to one having ordinary skill in the art to have chosen a known weave patterns, i.e., a twill pattern which produced a strong and durable fabric, as the weave pattern of the woven fabric claimed in Heiman.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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/J. A. C./

Examiner, Art Unit 1794

/Ula C Ruddock/
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